

PLASTIC PUMPS CPDR and RCNku

Horizontal Standardised Chemical Pumps – in a wide Range of Sizes and Materials.

■ THE RIGHT SOLUTION. FOR ANY FLUID.

RHEINHÜTTE PLASTIC PUMPS: THE IMPORTANT POINTS

Safety, reliability, flexibility and economy are key factors when selecting centrifugal pumps for the conveyance of hazardous, corrosive or toxic fluids. Rheinhütte plastic pumps are amongst the best in the market. Over 150 years' experience in materials and pump technology ensure that your conveyance requirements are solved in the best possible way.

STANDARDISED CHEMICAL PUMPS FOR THE MOST DEMANDING APPLICATIONS

Rheinhütte plastic pumps are standardised pumps – they comply with DIN EN 22858 and ISO 2858. This means that in terms of their external and connection dimensions and performance data (differential height and quantity) they are interchangeable with every other standardised chemical pump of the same size. We can also offer you customised fluid conveyance equipment outside the standard which is designed for your particular conveyance requirement – increased efficiency with the same pump size.

CPDR AND RCNKu: TWO NAMES, ONE CONCEPT

Small and large – CPDR and RCNKu. The two types differ from each other in their detailed design and manufacture. Materials and sealings are the same. Both types are available in individual pump sizes.

VOLUTE CASING: ALL-AROUND 100% PROTECTION

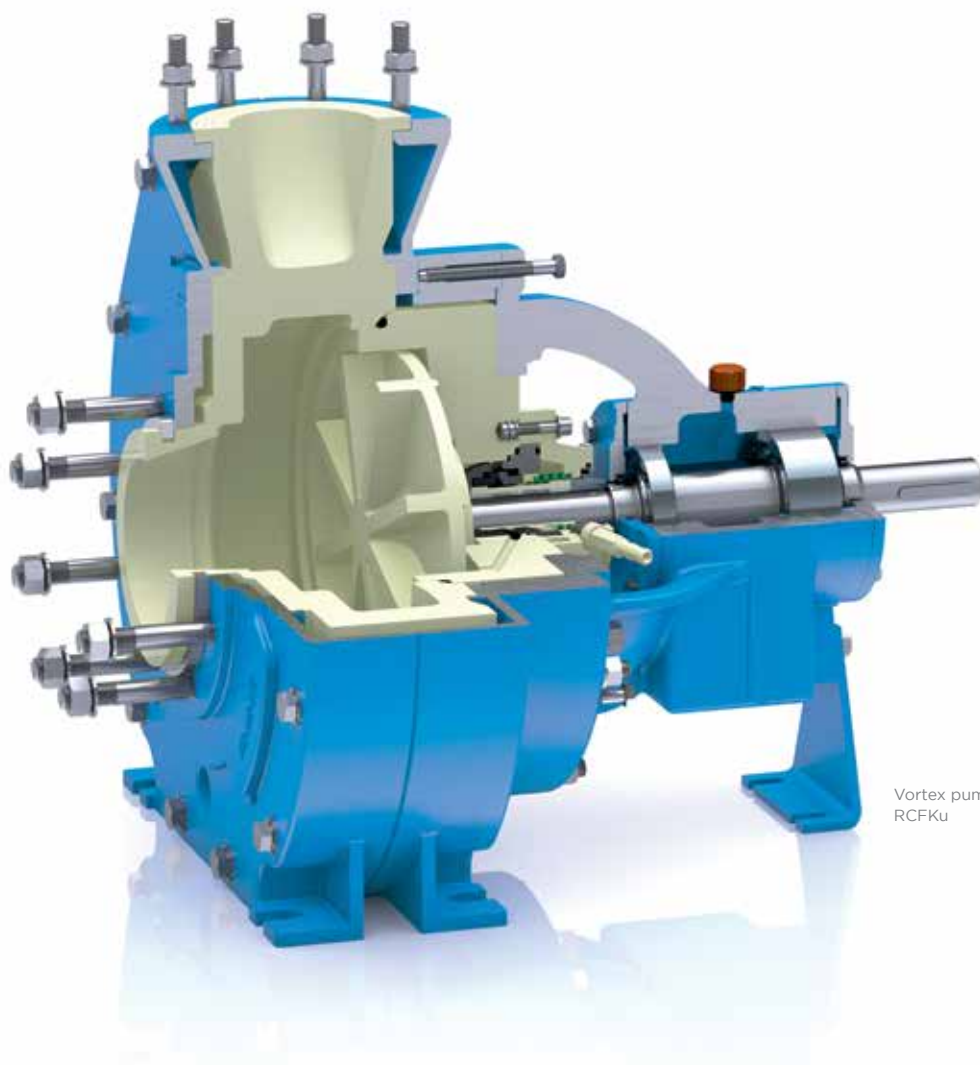
Standardised chemical pumps must be able to stand up to most things. Rheinhütte plastic pumps are optimally prepared. The entire volute casing is enclosed in a metal casing which protects against mechanical forces and UV light. Additionally the armoured pump casing absorbs the forces and moments acting on the pump flanges due to pipe loads.

SHAFT SEAL: SEALED BY DESIGN

Whether exposed to crystallising, hot or solid bearing media, Rheinhütte mechanical shaft seals contain the medium without leaking. An optimised design ensures that seals can be easily installed and removed and are economic in use. We use standard components in the seal system so you are independent of any particular manufacturer.

PUMP VARIETY: FLEXIBLE IN SIZE AND MATERIAL

Conveyance requirements can be flexibly and economically met with a wide range of 22 different pump sizes with capacities of up to 2,500 m³/h. The pump size and material will be specifically selected to meet your requirements. Flow-optimised hydraulic systems ensure efficiency and economy. Rheinhütte plastic pumps are available in four different materials: PP, PE 1000, PVDF and PTFE.



Vortex pump type
RCFKu

FROM PELLETS TO THE PUMP: ALL MADE IN-HOUSE

The vertical integration of the manufacture of Rheinhütte plastic pumps enables us to offer a product which is optimally matched with individual requirements. Starting with the selection of the plastic pellets, all important components are manufactured in-house and processed to become sophisticated pump parts. A large number of details play an important part in the manufacturing process: workmanship, machines and designs are individually adapted. At the end of this process Rheinhütte plastic pumps meet all the requirements placed on standardised chemical pumps.

VORTEX PUMPS: YOUR CHOICE WHEN THERE ARE SOLIDS IN THE MEDIUM

Large volumes of solids, gaseous components, fibres and gross contaminants prohibit the use of rotary pumps. But vortex pumps meet this conveyance challenge without problems. The impeller is only indirectly involved in accelerating the medium, leading to a corresponding reduction in wear. Toleration of even gaseous components in the fluid to be pumped is significantly enhanced. Large passage widths allow more operating reliability.

Options

- Vortex variants (CPRF or RCFKu)
- Flange motor model (CPDRB)
- Self-priming variants (RSKu)
- FDA approval for plastics
- Plastics with electrical conductivity
- Drain and flush connections
- Customised hydraulic systems

YOUR ADVANTAGES AT A GLANCE

1 SAFE

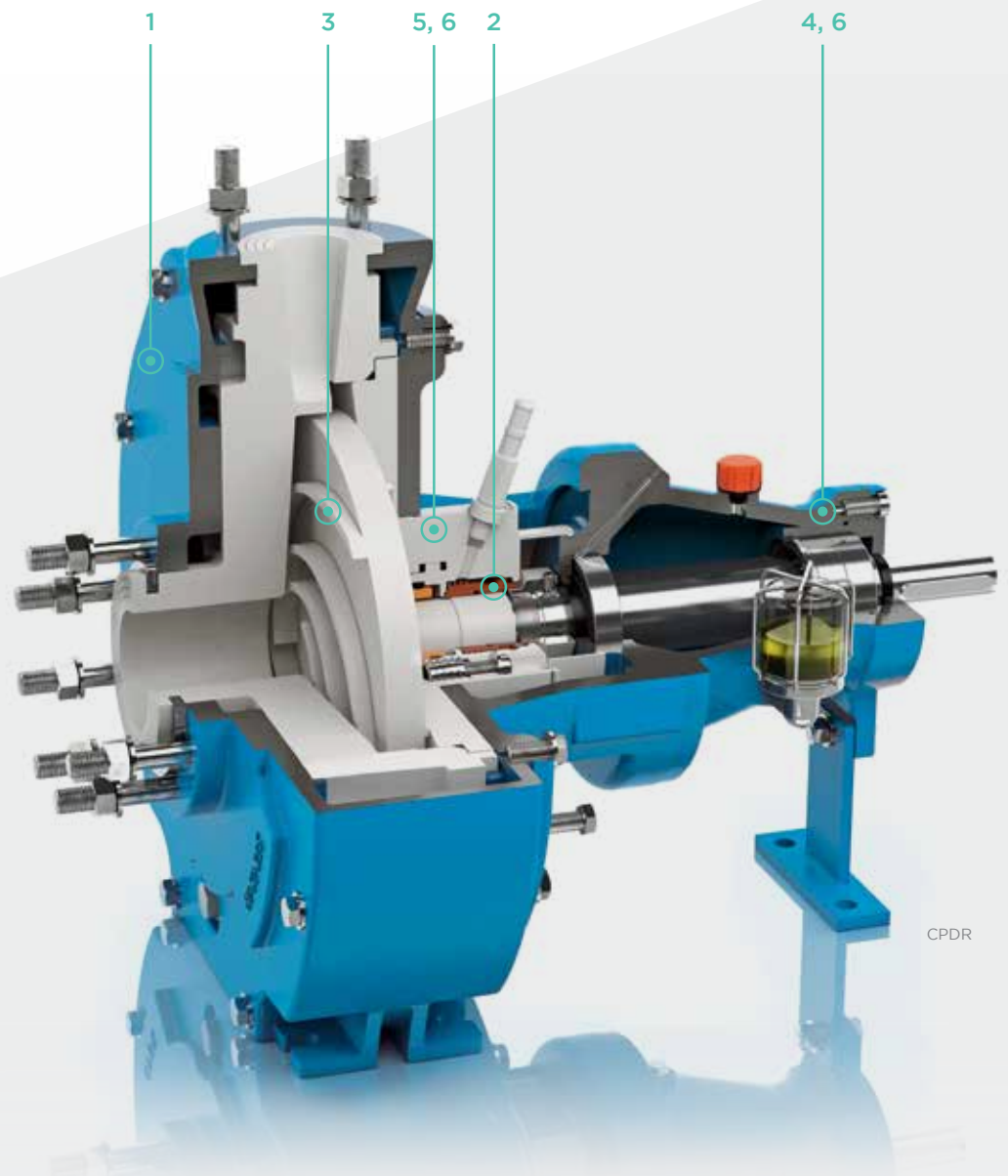
UV light and mechanical forces often impair the working life of a plastic pump. Our solution: a **robust metal casing** (GGG 40.3) protects the volute casing and **absorbs the forces** and moments **acting on the pump** flanges due to pipe loads.

2 RELIABLE

Rheinhütte mechanical seals remain fluid-tight even when handling difficult media. A **sealing system capable of dealing with solids extends the working life of** sensitive components. And the optimised design ensures that seals are easy to install.

3 MULTIFARIOUS

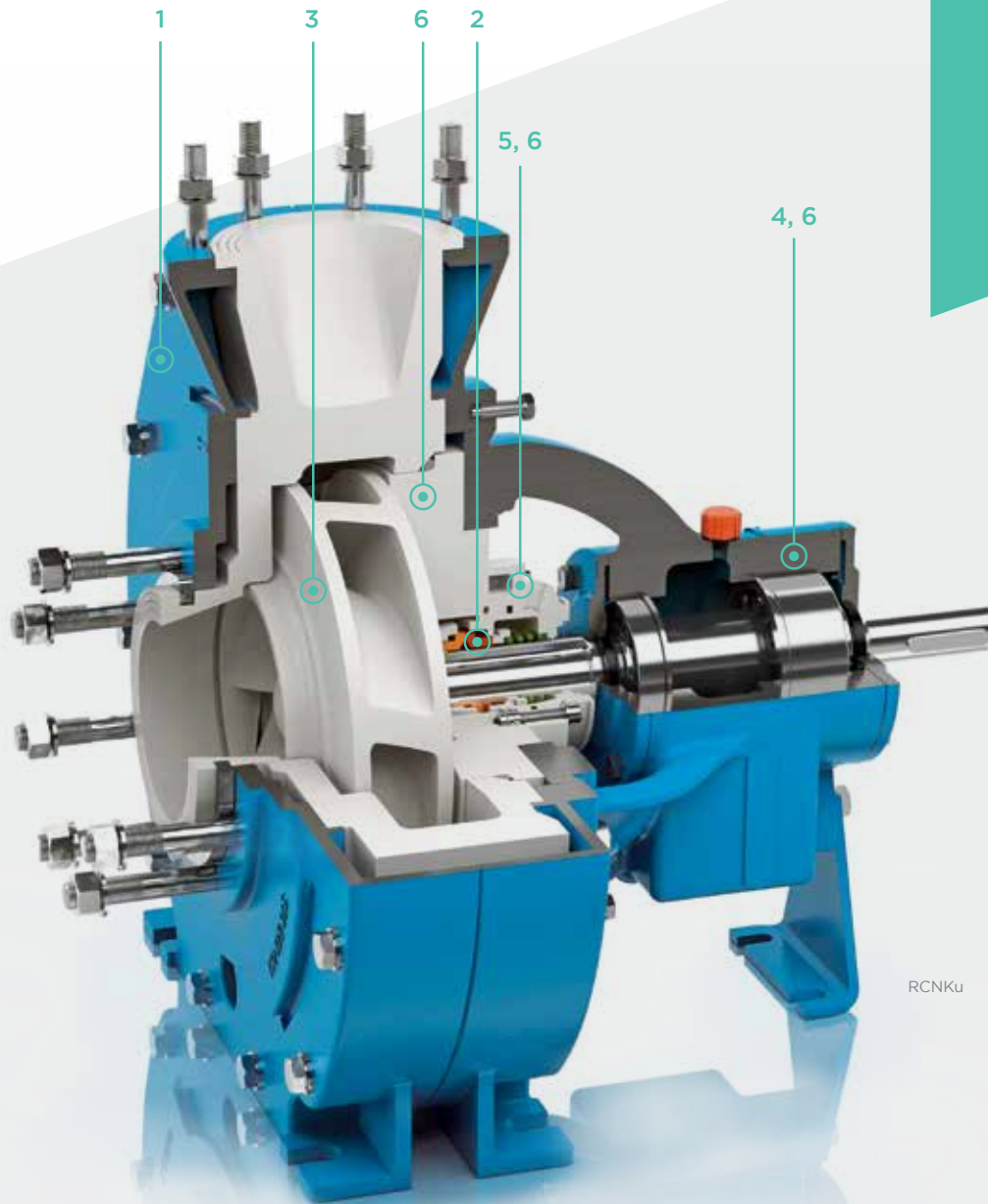
The material and dimensions of Rheinhütte plastic pumps are **specifically selected to meet your requirements**. We have a range of **22 different pump sizes** extending up to 2,500 m³/h to provide you with the optimal solution to your conveyance application. Depending on your conveyance requirement you can choose between PP, PE 1000, PVDF or PTFE.



CPDR

Pumps in
PTFE · PVDF ·
PE 1000 · PP

DIN EN 22858
ISO 2858
ISO 5199



4 ROBUST

A robust bearing bracket ensures only minor deflection on the shaft and a **long working life** for the roller bearings and the mechanical seal – even **when working at the limit of its capability**.

5 OPTIMISED

Seals optimised for their flow and wear characteristics enable the pumps to convey **media containing up to 30 % solids**.

6 EASY TO SERVICE

The **process-oriented design** enables wearing parts to be **quickly and easily replaced**.

PLASTIC

A VARIABLE MATERIAL

Our centrifugal pumps CPDR and RCNku are available in four different plastics – always specifically coordinated to meet your application. The use of plastics ensures excellent corrosion resistance. Your advantage – you can be certain of a long life-cycle for your pumps.

PP – POLYPROPYLENE THE TIME-TESTED PLASTIC

This plastic is particularly suitable for simple, frequently-met applications. Its performance in the temperature range from 0 to 100 °C is astonishing. PP has proved its suitability for use in acids, alkalis and salt solutions as well as in hydrochloric acid pickling processes.

PVDF – POLYVINYLIDENE FLUORIDE THE INEXPENSIVE GENERALIST

The partial fluorination of this polymer increases its resistance to chemicals several times over. PVDF resists most solvents, acids and oxidising agents. PVDF is an optimal material for many applications in the chemical industry from -20 to 130 °C.

PE 1000 (UHMWPE) – POLYETHYLENE THE WEAR-RESISTANT PLASTIC

The outstanding property of this high molecular polymer is its wear resistance when solids are present in the medium being pumped. A further attribute is its resistance to corrosion from a wide spectrum of chemicals. In many cases it is an alternative to stainless steels.

PTFE – POLYTETRAFLUORETHYLENE THE ALLROUNDER AMONG THE PLASTICS

Its excellent resistance to almost every chemical attack makes it possible for this material to be used in almost every application – at temperatures up to 180 °C.

The experts of RHEINHÜTTE MATERIAL ANALYSIS AND RECOMMENDATION will establish the optimal material for your particular application and also provide you with detailed information about the operating parameters and possible alternatives (including metals and ceramics).

MECHANICAL SEALS

LEAK-PROOF SECURITY

Plastic pumps are most often used where aggressive media have to be conveyed – a particular challenge for the shaft seal.

OPTIMAL THROUGH CUSTOMISED DESIGN

The design of pump and mechanical seal must be matched to a particular measure. Flow-optimised free-spaces and channels must precisely fit the seals and individual flushing concepts. Only by taking this approach is it possible to avoid the adverse effects of large volumes of solids or crystallising or adhesive media on the seal.

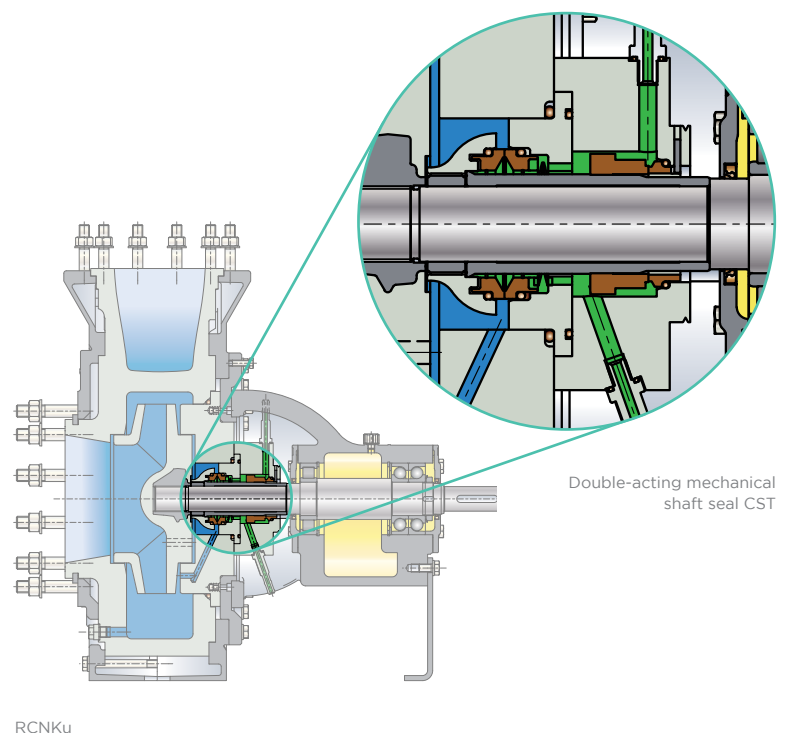
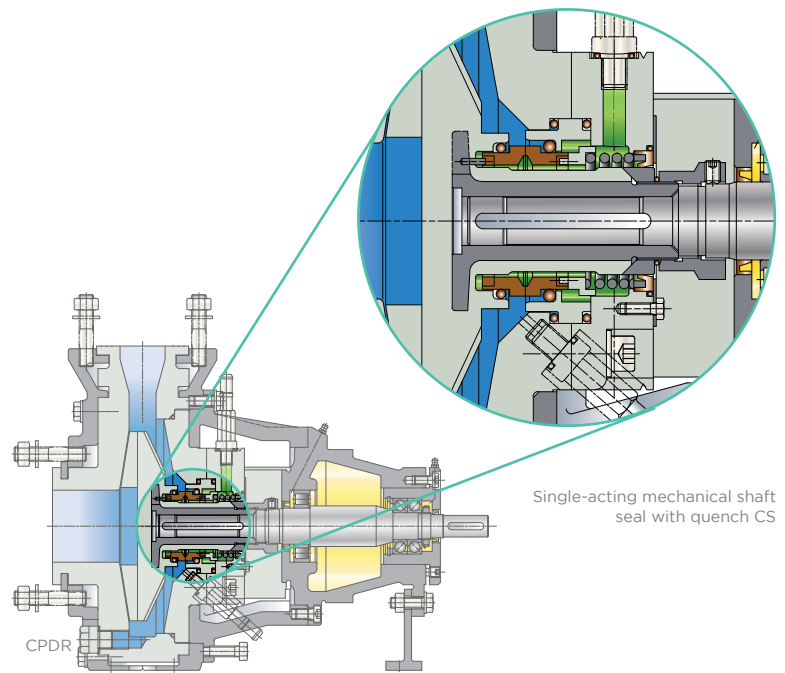
The advanced CS and CST seal designs of the Rheinhütte plastic pumps make operations safe and maintenance simple – for an economic standardised chemical pump.

A LONG LIFE THROUGH COORDINATED DESIGN

The design of the seal relocates all susceptible components to a protected stationary position – on the outside. Thus springs and O-rings can operate in the best possible environment free from the effect of the medium and the rotation of the shaft.

SERVICE-FRIENDLY THROUGH A LIMITED NUMBER OF COMPONENTS

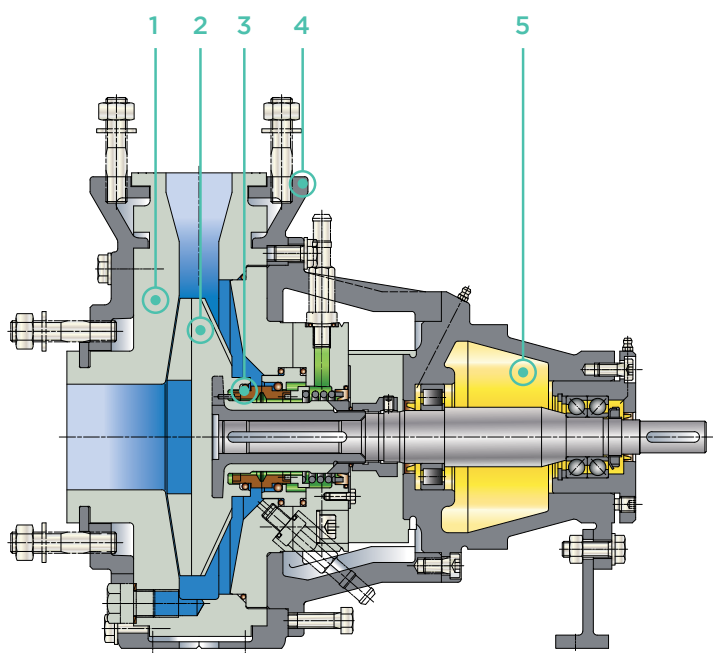
The bearing ring and the counter ring, the main components of the mechanical shaft seal are identical in construction. They can be purchased separately, this avoiding confusion during maintenance. The design of the seal always causes the optimal closing pressure to act on both rings during operation, making the seals highly effective and the wear slight.



IN DETAIL

DESIGN FEATURES

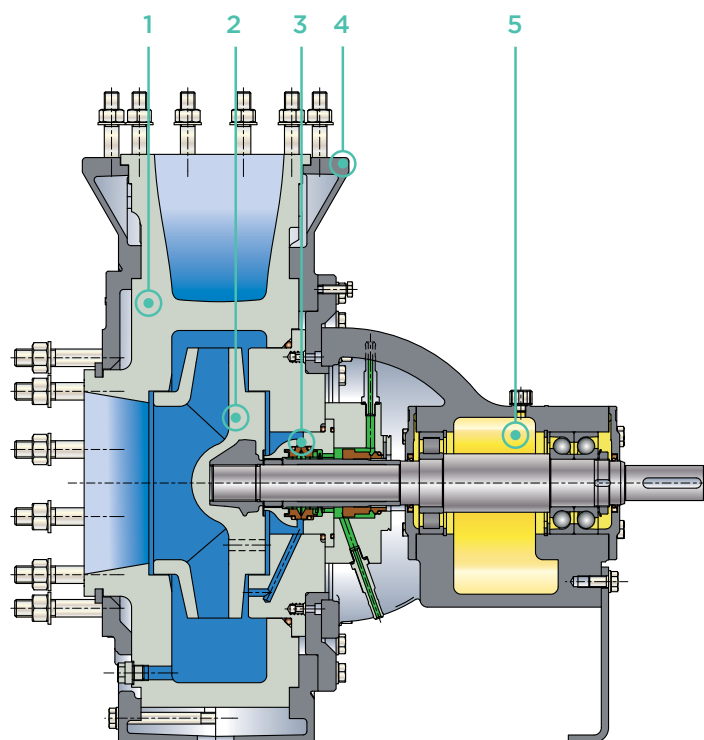
Design with a single-acting mechanical shaft seal, quench and drain connection (CPDR CSQRA)



CPDR

- 1 Volute casing: PTFE, PVDF, PE 1000 or PP
- 2 Open Impeller with back vanes
- 3 Single-acting mechanical shaft seal
- 4 Sturdy metal casing
- 5 Robust bearing bracket; oil or grease lubrication

Design with a double-acting mechanical shaft seal (RCNku CST)

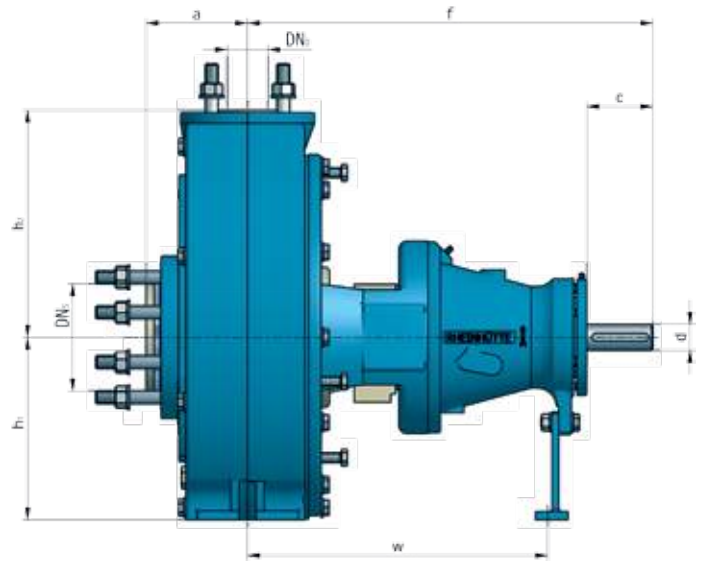


RCNku

- 1 Volute casing: PTFE, PVDF, PE 1000 or PP
- 2 Closed Impeller
- 3 Double-acting mechanical shaft seal
- 4 Sturdy metal casing
- 5 Robust bearing bracket; oil or grease lubrication

The pump complies generally with the drawing but the design is subject to alteration. Other designs on request.

IN DETAIL DIMENSIONS

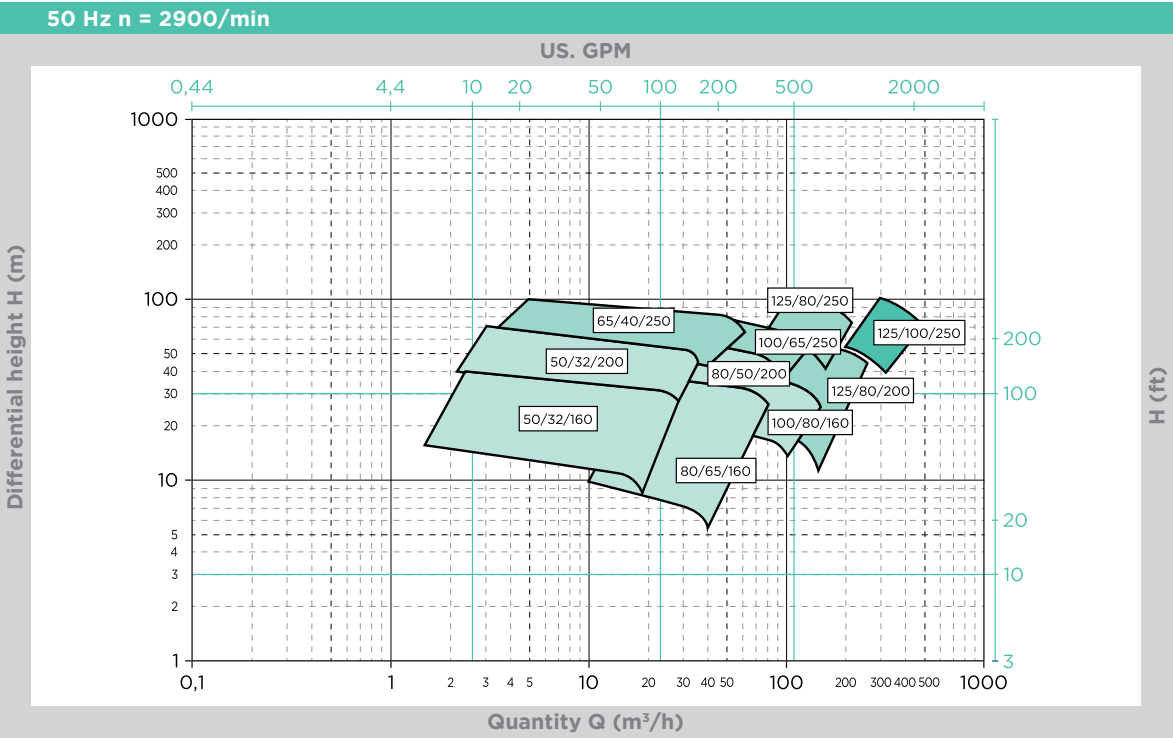
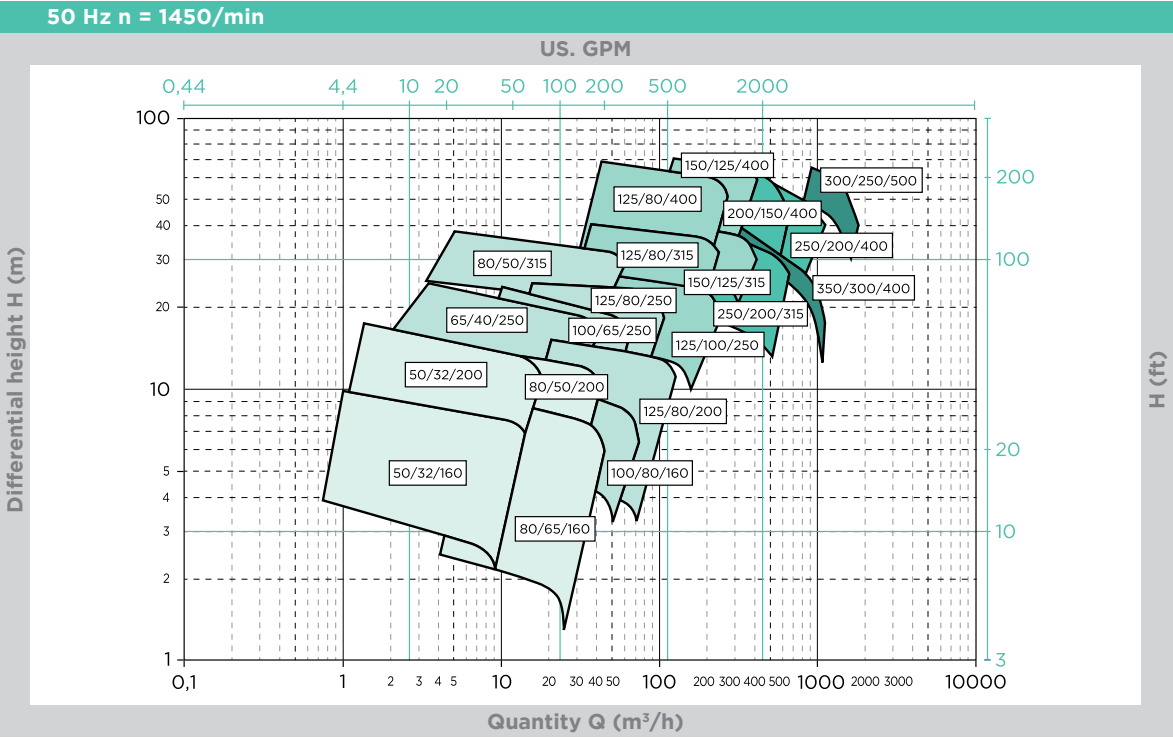


Size		BB ¹⁾	Pump dimensions				Foot dimensions	Shaft end		Flange dimensions	
			a	f	h ₁	h ₂	w	d	c	DN _D ²⁾	DN _S ³⁾
RCKu	25-160	–	75	335	112	135	–	19	45	25	32
CPDR	50-32-160	I	80	385	132	160	285	24	50	32	50
	50-32-200	I	80	385	160	180	285	24	50	32	50
	80-65-160	I	100	385	160	180	285	24	50	65	80
	80-50-200	I	100	385	160	200	285	24	50	50	80
	65-40-250	II	100	500	180	225	370	32	80	40	65
	80-50-315	II	125	500	225	280	370	32	80	50	80
	100-80-160	II	100	500	160	200	370	32	80	80	100
	100-65-250	II	125	500	200	250	370	32	80	65	100
	125-80-200	II	125	500	180	250	370	32	80	80	125
RCNKu	125-80-250	II	125	500	225	280	370	32	80	80	125
	125-80-315	III	125	530	250	315	370	42	110	80	125
	125-80-400	III	125	530	280	355	370	42	110	80	125
	125-100-250	III	140	530	225	280	370	42	110	100	125
	150-125-315	III	140	530	280	355	370	42	110	125	150
	150-125-400	III	140	530	315	400	370	42	110	125	150
	200-150-400	IV	160	670	315	450	500	48	110	150	200
	250-200-315	IV	180	670	355	450	500	48	110	200	250
	250-200-400	IV	180	670	355	500	500	48	110	200	250
	300-250-500	VI	250	935	475	670	680	75	150	250	300
	350-300-400	VI	300	935	500	670	680	75	150	300	350
	400-400-600	VII	340	1160	700	550	900	100	180	400	400

¹⁾ BB = Bearing bracket ²⁾ DN_p = Pressure flange ³⁾ DN_s = Suction flange

IN DETAIL

RANGE CHART

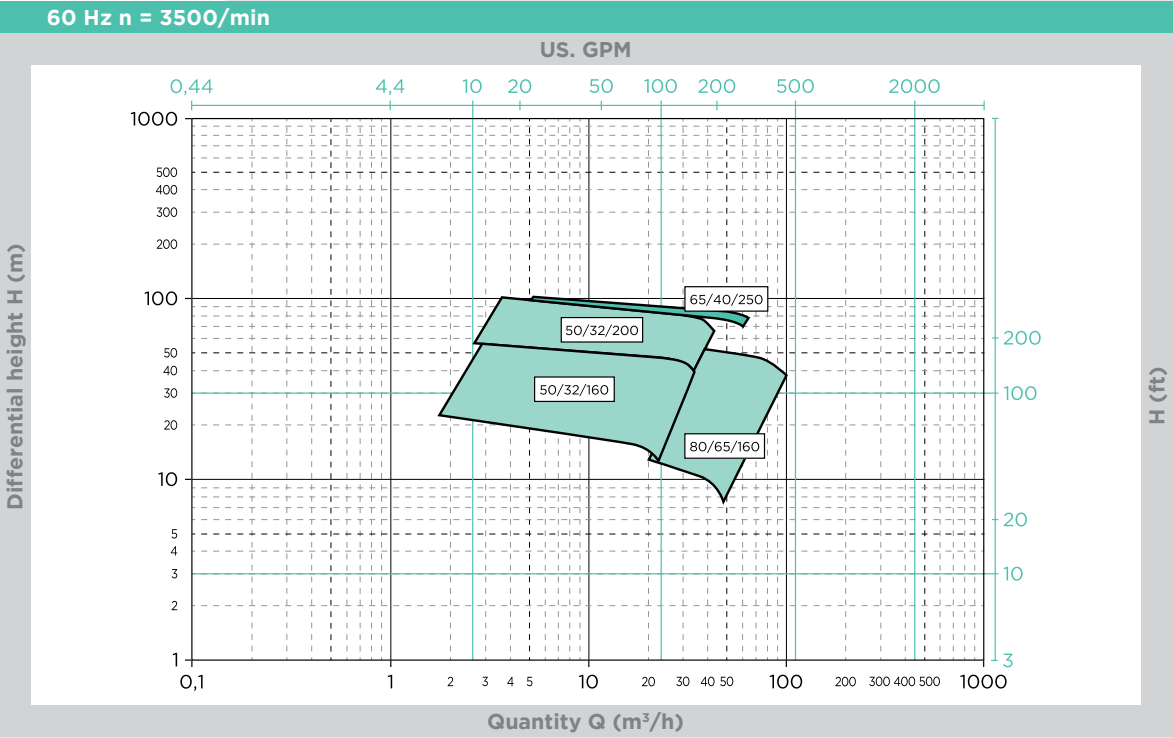
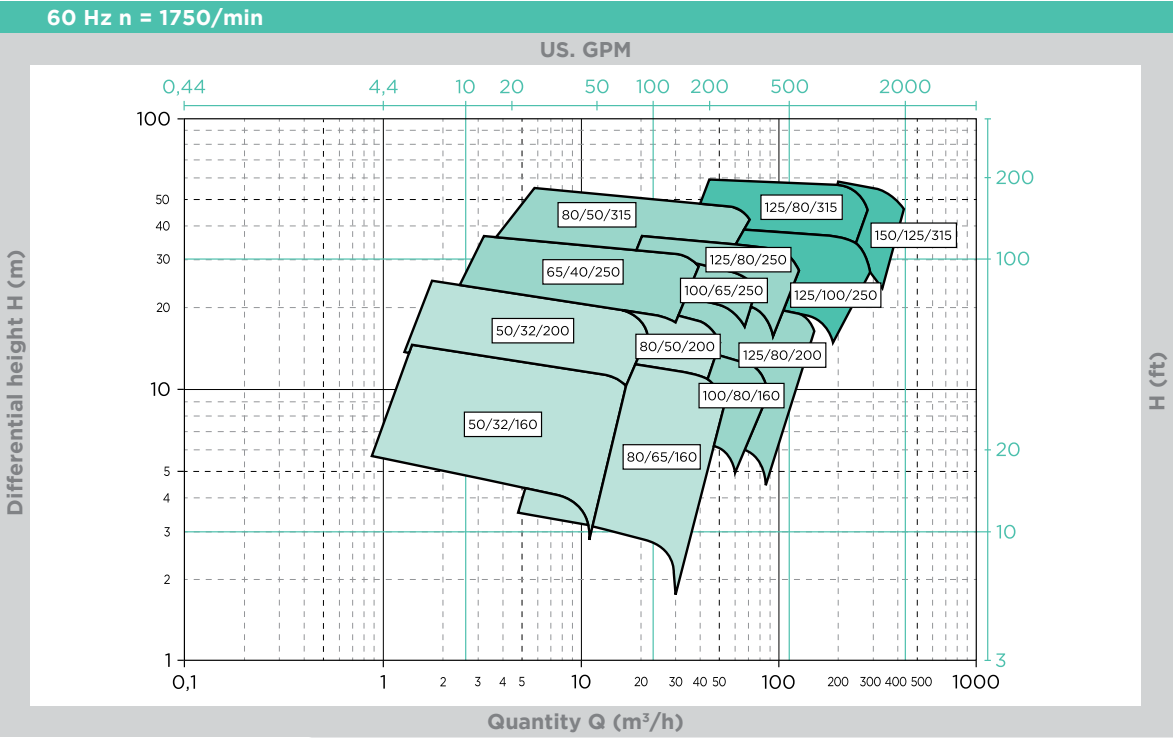


Bearing bracket

I	II	III	IV	VI
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IN DETAIL

RANGE CHART



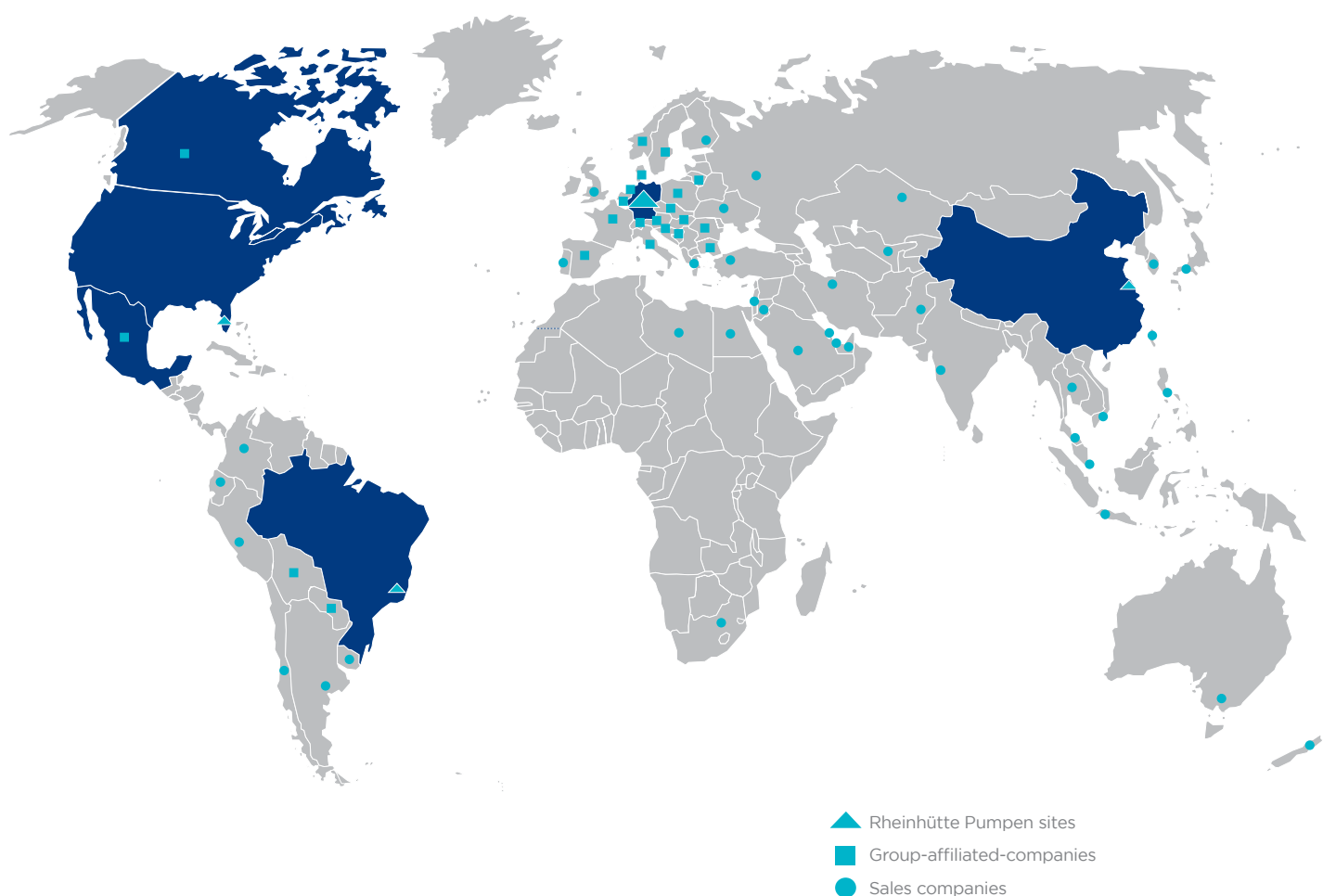
Bearing bracket

I	II	III	IV	VI
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The pump capacities are rounded upwards by the RCNKu 400/600 and downwards by the RCKu.

RHEINHÜTTE PUMPEN

GLOBAL EXPERTISE



Aliaxis
UTILITIES & INDUSTRY

FRIATEC Aktiengesellschaft
Division RheinHütte Pumpen
Rheingaustraße 96-98 – 65203 Wiesbaden – Germany
Tel +49 (0)611 604-0 – Fax +49 (0)611 604-328
info@rheinhuette.de
www.rheinhuette.de

